

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Air Permit Review

Permit Issue Date:

Region: Mooresville Regional Office
County: Cabarrus
NC Facility ID: 1300110
Inspector's Name: Melinda Wolanin
Date of Last Inspection: 01/12/2016
Compliance Code: 3 / Compliance - inspection

Facility Data	Permit Applicability (this application only)
<p>Applicant (Facility's Name): BFI Waste Systems of North America, CMS Landfill V</p> <p>Facility Address: BFI Waste Systems of North America, CMS Landfill V 5105 Morehead Road Concord, NC 28027</p> <p>SIC: 4953 / Refuse Systems NAICS: 562213 / Solid Waste Combustors and Incinerators</p> <p>Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V</p>	<p>SIP: 15A NCAC 2Q .0513 NSPS: 40 CFR Part 60 Subpart WWW, Subpart IIII NESHAP: 40 CFR Part 63 Subpart AAAA, Subpart ZZZZ PSD: N/A PSD Avoidance: 15A NCAC 02Q .0317 NC Toxics: Removed 15A NCAC 2Q .0705 and 2D .1100 and 2Q .0711 112(r): N/A Other: N/A</p>

Contact Data			Application Data
Facility Contact	Authorized Contact	Technical Contact	<p>Application Number: 1300110.14A Date Received: 11/21/2014 Application Type: Renewal Application Schedule: TV-Renewal</p> <p style="text-align: center;">Existing Permit Data</p> <p>Existing Permit Number: 08612/T12 Existing Permit Issue Date: 01/29/2013 Existing Permit Expiration Date: 10/31/2015</p>
<p>Mike Gurley Environmental Manager (704) 782-2004 5105 Morehead Road Concord, NC 28027</p>	<p>Bart Keller General Manager (704) 782-2004 5105 Morehead Road Concord, NC 28027</p>	<p>Mike Gurley Environmental Manager (704) 782-2004 5105 Morehead Road Concord, NC 28027</p>	

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2014	8.44	9.77	26.20	43.66	2.40	9.06	2.96 [Toluene]
2013	14.46	15.87	26.10	67.36	4.04	9.74	2.92 [Toluene]
2012	29.34	30.75	25.63	117.58	8.16	11.52	3.81 [Hydrogen chloride (hydrochlori)]
2011	39.36	38.18	25.89	138.61	10.48	12.47	4.95 [Hydrogen chloride (hydrochlori)]
2010	10.22	39.55	24.35	131.51	11.19	14.49	5.31 [Hydrogen chloride (hydrochlori)]

<p>Review Engineer: Yukiko (Yuki) Puram</p> <p>Review Engineer's Signature: _____ Date: _____</p>	<p style="text-align: center;">Comments / Recommendations:</p> <p>Issue: 08612/T13 Permit Issue Date: _____ Permit Expiration Date: _____</p>
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1. Purpose of Application

BFI Waste Systems of America, Charlotte Motor Speedway Solid Waste Landfill (CMS landfill) is located at 5105 Morehead Road in Concord, Cabarrus County, North Carolina. This facility is owned and operated by BFI Waste Systems of North America, LLC. This application (1300110.14A) was received on November 25, 2014, or at least nine months prior to the expiration date. Therefore, the existing permit shall not expire until the renewal permit has been issued or denied. All terms and conditions of the existing permit shall remain in effect until the renewal permit has been issued or denied. The applicant requested the removal of toxic air pollutant emissions conditions per 02Q .0702(a)(27)(B). No other modification was requested.

2. Facility Description

The CMS landfill is an active municipal solid waste (MSW) landfill. Their lined Subtitle D site began accepting waste in 1992 and currently receives approximately 975,000 tons of MSW per year. Collected landfill gas (LFG) is primarily directed to separately-owned and operated LFG-fueled turbines to generate electric power, which has a separate Title V air quality permit.

3. History/Background/Application Chronology

Application Chronology

- | | |
|-------------------|--|
| November 25, 2014 | Application for permit renewal was received. |
| November 25, 2014 | DAQ sent an acknowledgment letter indicating that the application for permit renewal was complete. |
| December 3, 2014 | The Mooresville (MRO) submitted comments on the permit renewal application. |
| December 17, 2015 | Mr. David Green of SCS Engineers was asked to update the emission calculations for the emergency generator. |
| January 6, 2016 | Mr. Green submitted updated emission calculations for the emergency generators. |
| January 8, 2016 | Mr. Green was informed that the flare operation limit must be changed in order to avoid the PSD conditions. Since the emissions from the emergency generators increased as result of recalculating based on the potential operation hours, the flare (CD-FLARE3) operation limit must be changed to stay under 250 tpy threshold for the CO emissions. |
| January 11, 2016 | Mr. Green called me to inform that the applicant requested to change the operation limit of CD-FLARE3 to 934 million cf/yr. |
| February 17, 2016 | A draft permit and permit review were sent to Mr. Booker Pullen of DAQ for review. |
| February 22, 2016 | Mr. Pullen reviewed the draft and returned with comments. |

February 23, 2016 A draft permit and permit review were sent to Mr. Keller of Republic Services, Mr. Greene of SCS Engineers and Ms. Denise Hayes of the Mooresville Regional office for review.

March 3, 2016 Mr. Greene sent an email asking the applicability of the testing conditions under NSPS. It was determined that the condition was not applicable since the facility is not subject to PSD major for VOCs.

March 11, 2016 Mr. Mike Gurley of Republic Services indicated they finished reviewing the draft and no further comments were noted.

March 14, 2016 A draft permit and the permit review are sent to be published for the public review. A copy of the documents will be also sent to the EPA review.

4. Permit Modifications/Changes and TVEE Discussion

The following table describes the changes to the current permit as part of the renewal process.

Existing Page(s)	New Page(s)	Section	Description of Changes
Cover and throughout	Cover and throughout	-	Updated all dates and permit revision numbers. Changed the name of the department to "Department of Environmental Quality."
N/A	Cover Page 2	-	Added a PSD tracking statement.
Attachment A	Attachment 1	-	Added IES-2, 4, 5, 6 and 7 to the insignificant activities list. Added MACT Subpart ZZZZ to the generators.
3	3	Emission Source Table	Removed ES-2, ES-4, ES-5, ES-6 and ES-7
3-4	3-4	Summary Table	<ul style="list-style-type: none"> Changed the description of "Limits/Standards" of NMOC. Removed toxic air pollutants.
10-11	4	2.1.A.1	Moved the sulfur dioxide emissions from combustion sources section (15A NCAC 02D .0516).
11	4	2.1.A.2	Moved the control of visible emission section (15A NCAC 02D .0521).
4-10	4-10	2.1.A.3	Referenced to the requirements in the permit instead of referring to the federal codes throughout this section.
N/A	4-5	2.1.A.3.b	Inserted the "Standards for Air Emissions from Municipal Solid Waste Landfills" section.
N/A	6	2.1.A.3.g.i	Inserted actual equation required to calculate NMOC emissions.
5	N/A	2.1.A.3.d	Deleted the conditions specific to the first 180 days after gas collection system startup.
N/A	6-7	2.1.A.3.g.iv	Added a reporting condition when the facility chooses to operate at a higher operation value at specific wells.
4	8	2.1.A.3.1	Moved the testing conditions after the compliance provisions. Added calculation methods for determining the removal of the control system and PSD. Added a noncompliance language.
10	N/A	2.1.A.1.j.(B)	Removed the initial annual report and the initial performance test conditions.
N/A	10	2.1.A.3.x	Added the landfill closure reporting requirement.
N/A	10	2.1.A.3.y	Added the reporting requirement prior to removing of control equipment.

Existing Page(s)	New Page(s)	Section	Description of Changes
11	12	2.1.A.5	Moved 15A NCAC 02D .1806 to the end of the section.
N/A	10-11	2.1.A.4.b and c	Added the operation/emission standards and the SSM provision.
11	11	2.1.A.4.d	Added the noncompliance language
11	11	2.1.A.4.e	Updated the language to be consistent with 40 CFR 63.1965.
11	12	2.1.A.4.f	Updated the language to be consistent with 40 CFR 63.6(e)(iii).
11	12	2.1.A.4.h through j	Updated the language to be consistent with 40 CFR 63.6(c)(iii), 63.6(c)(iv) and 63.6(c)(v).
12-15	N/A	2.1.B	Deleted the conditions for the generators (ID Nos. ES-2, ES-4, ES-5, ES-6 and ES-7).
16	N/A	2.2.A and B	Toxics Conditions (15A NCAC 02Q .0705 and 02D .1100) removed.
16	12	2.2A.2	Changed the landfill gas flow rate limit to 934,000,000 scf per consecutive twelve months.
18-28	13-21	3	Updated the General Condition to version 4.0.

TV Equipment Editor was modified on February 12, 2016. Five emergency generators (ID Nos. ES-2, ES-4, ES-5, ES-6 and ES-7) were removed from the significant source list, and were added to the insignificant sources. The IDs were re-numbered to IES-2, IES-4, IES-5, IES-6 and IES-7. Control systems were modified to reflect their operation system. Two flares (ID Nos. CD-FLARE2 and CD-FLARE3) were removed from CS-1 because the flares are operated independent of the treatment system. CS-2 was created to include one landfill gas collection and control system (ID No. CD-GCCS1) and two flares (ID Nos. CD-FLARE2 and CD-FLARE3). Both CS-1 and CS-2 are associated with municipal solid waste landfill (ID No. ES-1).

5. Regulatory Review

A. Municipal Solid Waste Landfill (ID No. ES-001): Municipal solid waste landfill controlled by gas collection system (ID No. CD-GCCS1), one gas treatment system (ID No. CD-Treatment), one landfill gas-fired enclosed flare (ID No. CD-FLARE2) and one landfill gas-fired utility flare (ID No. CD-FLARE3) are subject to the following regulations. The permit will be updated to reflect the most current stipulations for all applicable regulations. The order of the stipulations listed on the permit was changed to be listed by numerical order.

15A NCAC 2D .0516: SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES

The flares (ID Nos. CD-FLARE2 and CD-FLARE3) are subject to this regulation. No change was made during this renewal.

15A NCAC 2D .0521: CONTROL OF VISIBLE EMISSIONS

The flares (ID Nos. CD-FLARE2 and CD-FLARE3) are subject to this regulation. No change was made during this renewal.

15A NCAC 2D .0524, 40 CFR Part 60, Subpart WWWW “New Source Performance Standards”

This landfill is subject to 40 CFR Part 60, Subpart WWWW. Due to the capacity of the landfill, the facility is subject to Title V permitting. The facility is required to install a GCCS per §60.752 since their NMOC emissions are over the 50 Mg threshold. Although the requirements stay the same, the format of the permit conditions was updated to be more compatible to the DAQ’s typical permitting format. Requirements that are not applicable specific to this facility were removed, and some applicable conditions were added. In order to make the requirements clearer to the Permittee, instead

of referencing to the federal regulation codes, permit section numbers were used as reference where it is possible. See the table in Section 4 for more detail.

15A NCAC 2D .1111, 40 CFR Part 63, MACT Subpart AAAA – The facility is subject to MACT Subpart AAAA per §63.1935(3) since uncontrolled NMOC emissions are estimated to be more than 50 Mg/yr. In addition to the existing requirements in T12, the following SSM plan requirements were added to the permit:

Startup, Shutdown and Malfunction Plan [40 CFR 63.6(e)(iii)]

The Permittee must develop a written startup, shutdown, and malfunction plan that describes, in detail, procedures for operating and maintaining the source during periods of startup, shutdown, and malfunction; and a program of corrective action for malfunctioning process, air pollution control, and monitoring equipment used to comply with the relevant standard. The startup, shutdown, and malfunction plan does not need to address any scenario that would not cause the source to exceed an applicable emission limitation in the relevant standard. This plan must be developed by the owner or operator by the source's compliance date for that relevant standard. The purpose of the startup, shutdown, and malfunction plan is to:

- i. Ensure that, at all times, the owner or operator operates and maintains each affected source, including associated air pollution control and monitoring equipment, in a manner which satisfies the general duty to minimize emissions established by paragraph (e)(1)(i) of this section;
- ii. Ensure that owners or operators are prepared to correct malfunctions as soon as practicable after their occurrence in order to minimize excess emissions of hazardous air pollutants; and
- iii. Reduce the reporting burden associated with periods of startup, shutdown, and malfunction (including corrective action taken to restore malfunctioning process and air pollution control equipment to its normal or usual manner of operation).

In addition, the following Recordkeeping/Reporting requirements are added in case of excess emissions during the startup, shutdown and malfunction events:

- h. When actions taken by the Permittee during a startup or shutdown (and the startup or shutdown causes the source to exceed any applicable emission limitation in the relevant emission standards), or malfunction (including actions taken to correct a malfunction) are consistent with the procedures specified in the affected source's startup, shutdown, and malfunction plan, the Permittee must keep records for that event which demonstrate that the procedures specified in the plan were followed. These records may take the form of a "checklist," or other effective form of recordkeeping that confirms conformance with the startup, shutdown, and malfunction plan and describes the actions taken for that event. In addition, the Permittee must keep records of these events as specified in paragraph 63.10(b), including records of the occurrence and duration of each startup or shutdown (if the startup or shutdown causes the source to exceed any applicable emission limitation in the relevant emission standards), or malfunction of operation and each malfunction of the air pollution control and monitoring equipment. Furthermore, the Permittee shall confirm that actions taken during the relevant reporting period during periods of startup, shutdown, and malfunction were consistent with the affected source's startup, shutdown and malfunction plan in the semiannual startup, shutdown, and malfunction report required in §63.10(d)(5). [40 CFR 63.6(e)(3)(iii)]

- i. The Permittee shall maintain files of all information (including all reports and notifications) required by this part recorded in a form suitable and readily available for expeditious inspection and review. The files shall be retained for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. At a minimum, the most recent 2 years of data shall be retained on site. The remaining 3 years of data may be retained off site. Such files may be maintained on microfilm, on a computer, on computer floppy disks, on magnetic tape disks, or on microfiche.
- j. The Permittee shall maintain relevant records for such source of:
 - (i) The occurrence and duration of each startup or shutdown when the startup or shutdown causes the source to exceed any applicable emission limitation in the relevant emission standards;
 - (ii) The occurrence and duration of each malfunction of operation (i.e., process equipment) or the required air pollution control and monitoring equipment;
 - (iii) All required maintenance performed on the air pollution control and monitoring equipment;
 - (iv)(A) Actions taken during periods of startup or shutdown when the source exceeded applicable emission limitations in a relevant standard and when the actions taken are different from the procedures specified in the affected source's startup, shutdown, and malfunction plan (see §63.6(e)(3)); or
(B) Actions taken during periods of malfunction (including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation) when the actions taken are different from the procedures specified in the affected source's startup, shutdown, and malfunction plan (see §63.6(e)(3));
 - (v) All information necessary, including actions taken, to demonstrate conformance with the affected source's startup, shutdown, and malfunction plan (see §63.6(e)(3)) when all actions taken during periods of startup or shutdown (and the startup or shutdown causes the source to exceed any applicable emission limitation in the relevant emission standards), and malfunction (including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation) are consistent with the procedures specified in such plan. (The information needed to demonstrate conformance with the startup, shutdown, and malfunction plan may be recorded using a "checklist," or some other effective form of recordkeeping, in order to minimize the recordkeeping burden for conforming events);
 - (vi) Each period during which a CMS is malfunctioning or inoperative (including out-of-control periods);
- k. If an action taken by the Permittee during a startup, shutdown, or malfunction (including an action taken to correct a malfunction) is not consistent with the procedures specified in the affected source's startup, shutdown, and malfunction plan, and the source exceeds any applicable emission limitation in the relevant emission standard, then the Permittee must record the actions taken for that event and must report such actions within 2 working days after commencing actions inconsistent with the plan, followed by a letter within 7 working days after the end of the event, in accordance with §63.10(d)(5) unless the owner or operator makes alternative reporting arrangements, in advance, with DAQ. [40 CFR 63.6(c)(iv)]
- l. The Permittee must maintain at the affected source a current startup, shutdown, and malfunction plan and must make the plan available upon request for inspection and copying

by DAQ. In addition, if the startup, shutdown, and malfunction plan is subsequently revised as provided in paragraph 3.c of this section, the Permittee must maintain at the affected source each previous (i.e., superseded) version of the startup, shutdown, and malfunction plan, and must make each such previous version available for inspection and copying by the DAQ for a period of 5 years after revision of the plan. [40 CFR 63.6(c)(v)]

B. Diesel fuel-fired emergency generators (ID Nos. ES-2, ES-4, ES-5, ES-6 and ES-7)

The heat input rating and the installation dates of the emergency generators are listed as follows:

- ES-2: 150 kW emergency RICE installed at the facility on 4/19/2004
- ES-4: 250 kW emergency RICE installed at the facility in 2005
- ES-5: 250 kW emergency RICE installed at the facility in 1992
- ES-6: 250 kW emergency RICE installed at the facility in 1999
- ES-7: 500 kW emergency RICE installed at the facility in 2013 manufactured in 2012

The following table shows potential emissions of each emergency generator based on the application:

Pollutant	ES-2	ES-4	ES-5	ES-6	ES-7
	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)
CO	0.3594	0.5929	0.5929	0.5929	0.1846
NOx	1.6667	2.7523	2.7523	2.7523	1.4771
PM	0.1172	0.1935	0.1935	0.1935	0.0518
PM10	0.1172	0.1935	0.1935	0.1935	0.0518
SO2	0.1096	0.1810	0.1810	0.1810	0.3147
VOC	0.1323	0.2184	0.2184	0.2184	0.3798

*The emissions calculations were based on 500 hr/yr of operation.

As shown in the table above, the emissions of each pollutant from each generator is less than 5 tpy. Because of the size of the engines, they can be considered as insignificant sources per 02Q .0503. In the previous permit, they were listed as significant sources because the “State Only” air toxic requirements triggered the toxic review for combustion sources. However, the toxic requirements are now being removed as described in Section 7 since the landfill is subject to MACT Subpart AAAA and the engines are subject to MACT Subpart ZZZZ. Therefore, the engines will be removed from the permitted sources, and will be added to the insignificant source list. All the engines remain subject to MACT Subpart ZZZZ and ES-7 is subject to NSPS III.

6. NSPS, NESHAPS/MACT, NSR/PSD, 112(r), RACT, CAM

The CMS landfill is subject to NSPS Subpart WWW and MACT Subpart AAAA. See Section 5 above for the applicable requirements. The emergency generators (ID Nos. ES-2, ES-4, ES-5, ES-6 and ES-7) are all subject to MACT Subpart ZZZZ. Emergency generator ES-7 is also subject to NSPS Subpart III.

The facility requested 02Q .0317, Avoidance Condition for 02D .0530, Prevention of Significant Deterioration for Carbon Monoxide to remain as a PSD minor facility. Currently, LFG entering the flare (ID No. CD-FLARE3) is limited to 961.848 million scf per consecutive 12 months. However, when the applicant calculated facility-wide emissions, actual emissions from the emergency

generators (ID Nos. ES-2, ES-4, ES-5, ES-6 and ES-7) based on 26 hours of operation were used. In order to calculate facility-wide emissions for the PSD avoidance conditions, the applicant must calculate potential emissions. In case of emergency generators, the EPA recommends using 500 hours of operation at maximum heat input to calculate potential emissions. As requested, the facility updated their calculations based on 500 hours of operation. As a result, the facility-wide CO emissions were 2.21 tons higher than the original calculation, which exceeded 250 tons facility-wide limit for the PSD avoidance condition. The facility then decided to lower the LFG flow limit to the flare to 934 million scf per consecutive 12 months to stay under 250 tpy for CO. The operation limit will be changed on the permit accordingly.

7. Facility Wide Air Toxics

The facility requested the removal of the air toxic conditions per G.S. 143-215.107(a) and 15A NCAC 2Q .0702(a)(27). The landfill is subject to MACT Subpart AAAA, *NESHAP for Municipal Solid Waste Landfill*, and the generators are subject to MACT Subpart ZZZZ, *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*. North Carolina GS. 143-215.107(a) exempts emission sources subject to MACT standards from NC air toxics regulations provided their emissions do not “present an unacceptable risk to human health.”

In order to evaluate the risk of the toxic pollutant emissions, a toxic evaluation was conducted. According to the previous air permit review T12, a dispersion modeling analysis was conducted for benzene, ethyl mercaptan, hydrogen chloride, hydrogen sulfide, methyl mercaptan and vinyl chloride. The following table shows the percentage of Acceptable Ambient Level (AAL) of each pollutant based on the maximum emissions from the facility.

Pollutant	Averaging Period	Emission rate	% of AAL
Benzene	Annual	211.10 lbs per year	47%
Ethyl mercaptan	1-hour	0.027 lbs per hour	Less than 1 %
Hydrogen chloride	1-hour	2.07 lbs per hour	Less than 1 %
Hydrogen sulfide	24-hour	52.14 lbs per 24-hours	2%
Methyl mercaptan	1-hour	0.02 lbs per hour	Less than 1 %
Vinyl chloride	Annual	199.10 lbs per year	3%

As shown in the table, all pollutants’ maximum potential emissions were well under the AAL even with the maximum potential emissions. Based on this analysis, it appears that no unacceptable risk to human health is being presented. Therefore, the toxic air pollutant conditions will be removed from the air permit in accordance with 15A NCAC 2Q .0702(a)(27).

8. Facility Emissions Review

CMS landfill submitted facility-wide potential emissions and potential emissions with PSD avoidance operational limit with the application. After they updated the emergency generators emissions as described in Section 5, and the PSD avoidance operational limit as described in Section 6 of this review, the facility-wide potential emissions are updated as below:

	Landfill (ES-1)	Flare2 (CD- FLARE2)	Flare3 (CD- FLARE3)	Flare 3 w/PSD limit*	Generators 2,4,5,6 (ES- 2,4,5,6)	Generator 7 (ES-7)	Facility- wide PTE	Facility- wide PTE w/PSD Limit*
CO	---	159.57	147.60	87.43	2.14	0.185	309.50	249.33
NOx	---	47.87	27.13	16.07	9.92	1.477	86.40	75.34
PM	---	13.30	6.65	3.94	0.7	0.052	20.70	17.99
SO ₂	---	8.42	4.21	2.52	0.65	0.315	13.59	11.91
NMOC	74.59	1.65	0.82	0.49	---	---	77.06	76.73
VOC	29.10	0.64	0.32	0.19	0.79	0.38	31.22	31.09

*PSD avoidance operation limit is based on 934 million scf /yr of LFG for Flare 3 (CD-FLARE3).

9. Compliance Status

CMS landfill has no violation in the past five years according to the DAQ's database. During the most recent inspection, conducted on November 18, 2015 by Ms. Melinda Wolanin of the MRO, the facility appeared to be in compliance with all applicable requirements.

10. Public Notice/EPA and Affected State(s) Review

A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 2Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. The US EPA will also be given a 45 day review period. Copies of the public notice shall be sent to persons on the Title V mailing list and the EPA. Pursuant to 15A NCAC 2Q .0522, a copy of each permit application, each proposed permit and each final permit pursuant shall be provided to EPA.

11. Other Regulatory Considerations

- A P.E. seal is NOT required for this application.
- A zoning consistency determination is NOT required for this application.
- Although the minor source baseline dates for PM10 and SO2 have been triggered in Cabarrus County, no increase in potential emissions are expected from this modification of the permit.

12. Recommendations

TBD